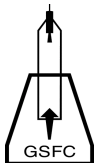
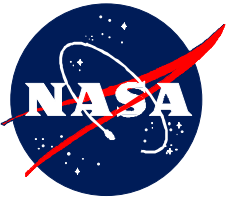


# Earth Explorers Program Overview

**Rapid Spacecraft Industry Day  
December 7, 2000**

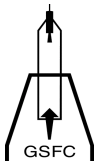


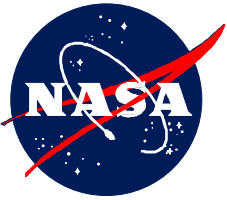


# Outline



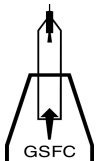
- ☐ **Background**
- ☐ **Organization**
- ☐ **Current Projects / Missions**
- ☐ **Earth System Science Pathfinder Project**
  - ☐ **Highlights**
  - ☐ **Mission Selection Process**
  - ☐ **Mission Selection Status**

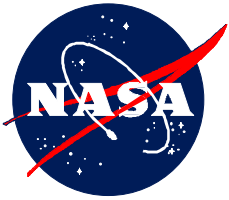




# Program Objectives

- ❑ **Primary Objective: To provide pathfinder exploratory and process driven measurements answering innovative and unique Earth science questions related to the atmosphere, oceans, land surface, polar ice regions and solid Earth.**
  - **Missions are of a relatively short duration, demonstrating process measurements which may lead to eventual Earth science systematic measurements and data set goals.**
  - **Missions are characterized by relatively low to moderate cost and are small to medium sized missions capable of being designed, developed, integrated, tested and launched in a reasonable period of time.**
  - **Quick-turnaround projects (e.g. QuikScat, QuikToms, etc.) have extremely short formulation and implementation periods providing rapid initiation of science measurements.**
  - **Missions utilize innovative management processes and techniques.**

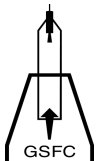


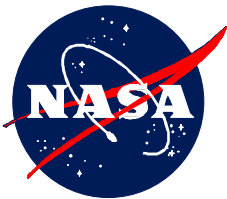


# Earth Explorers Program



<b>Enterprise:</b>	<b>Earth Science</b>
<b>Lead Center:</b>	<b>GSFC</b>
<b>Performing Centers:</b>	<b>GSFC, JPL, LaRC, KSC, JSC</b>
<b>Program Manager:</b>	<b>John Campbell (Acting), Nicholas Chrissotimos (Deputy)</b>
<b>Program Type:</b>	<b>Science</b>
<b>Projects:</b>	<b>ESSP: Vegetation Canopy Lidar (VCL); Gravity Recovery and Climate Experiment (GRACE); PICASSO-CENA; CloudSat; VOLCAM (Alternate ESSP)</b> <b>UnESS; Experiments of Opportunity (SAC-C, SLA)</b> <b>QuikTOMS</b> <b>TRIANA</b>
<b>Partners:</b>	<b>CNES, DLR (Germany), CSA, UMCP, UTCSR, CSU, USAF, DOE</b>
<b>Program Description:</b>	<b>The Earth Explorers Program develops and launches remote sensing missions, provides ground support systems, and collects and processes data for expanding scientific knowledge of the Earth in the area of climate and terrestrial and marine ecosystems</b>



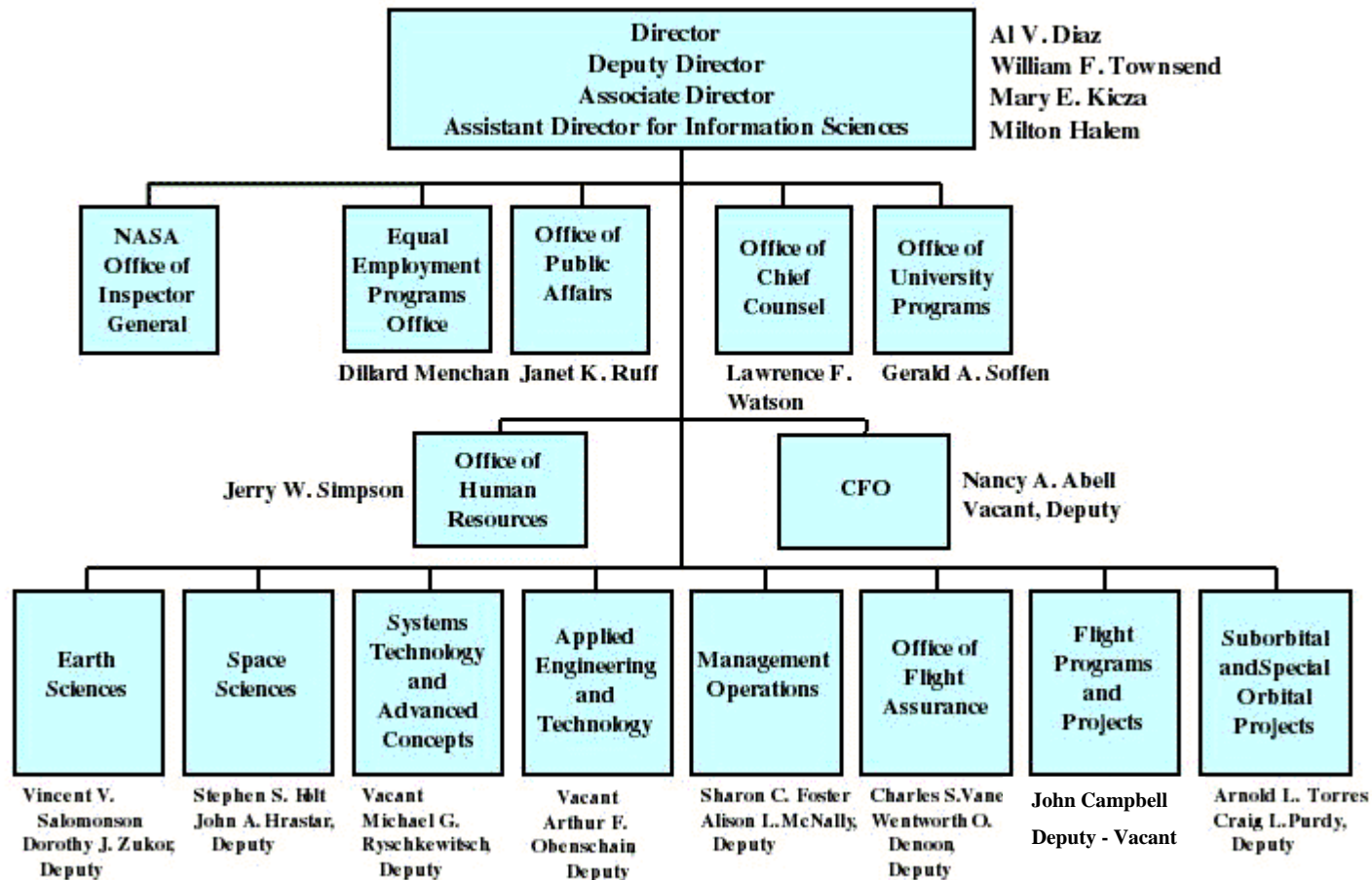


# GSFC Organization

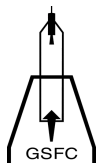


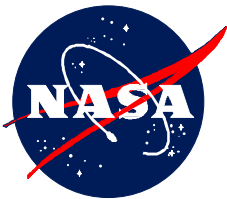
## Goddard Space Flight Center

as of Jan 1999



A1431





# FLIGHT PROGRAMS & PROJECTS DIRECTORATE



DIRECTOR OF - **JOHN CAMPBELL**

DEPUTY DIRECTOR - **VACANT**

DEPUTY DIRECTOR OF FLT PROJECTS FOR PLANNING & BUSINESS MGMT. - **DIANE WILLIAMS**

ASSOC DIR - **JAMES GREAVES**

ASST DIR OF FLT PROJ. FOR TECHNOLOGY, REVIEWS & STUDIES - **ARLENE PETERSON**

400.1 STAAC  
BUSINESS  
G. BARTH

401 MISSION  
INTEGRATION  
R. BAKER

402 NASA  
IPO - REP  
S. SCHNEIDER

403 FPPD  
BUSINESS  
A. HEWITT

460  
PROG MGR  
FOR SOLAR  
TERRESTRIAL  
PROBES  
G. COLON

- TIMED
- STEREO
- SOLAR B

404  
PROG MGR  
FOR INTERNATIONAL  
D. MACHI

- SAC-A
- XMM
- S-X-G
- ASTRO-E
- INTEGRAL
- CLUSTER II
- SAC-C

410  
ASSOC DIR/  
PROG MGR  
FOR EXPLORERS  
J. BARROWMAN

- FUSE
- WIRE
- HESSI
- GALEX
- MAP
- IMAGE
- HETE-2
- TWINS
- STEDI - TERRIERS
- STEDI - CATSAT

440  
ASSOC DIR/  
PROG MGR  
FOR HUBBLE  
SPACE  
TELESCOPE  
J. CAMPBELL

- DEP PM DEV
  - HST (442)
  - NGST (443)
- DEP PM OPER
  - HST (441)
  - SS OPERATIONS (444)

450  
ASSOC DIR/  
PROG MGR  
FOR MISSION  
SERVICES  
P. LIEBRECHT

- TDRS (454)
- SN (451)
- GN (452)
- MDS (453)
- OLS (457)
- IFMP (455)
- RSDO (456)

420  
ASSOC DIR/  
PROG MGR  
FOR EOS  
C. SCOLESE

- DEP PM DEV
  - LANDSAT (427)
  - AM (421)
  - PM (422)
  - CHEM (424)
  - ICESAT (425)
  - SORCE (426)
- DEP PM OPER
  - ESDIS (423)
  - ES OPERATIONS (428)

470  
ASSOC DIR/  
PROG MGR  
FOR EARTH  
EXPLORERS  
VACANT

- ESSP (471)
- VCL
- GRACE
- PICASSO-CENA
- CLOUD SAT
- VOLCAM
- UNES
- QUIKTOMS (472)
- AEAP (473)
- TRIANA (474)

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PROG MGR  
FOR GOES  
M. DAVIS

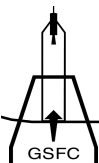
- GOES L-M
- GOES N-Q

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ASSOC DIR/  
PROG MGR  
FOR POES  
H. McCAIN

- POES L-N'

490  
PROG MGR  
FOR NMP/EO  
B. CRAMER

- EO-1
- EO-2

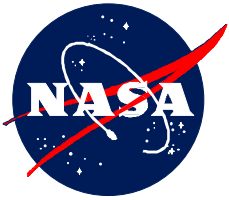


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CODE M

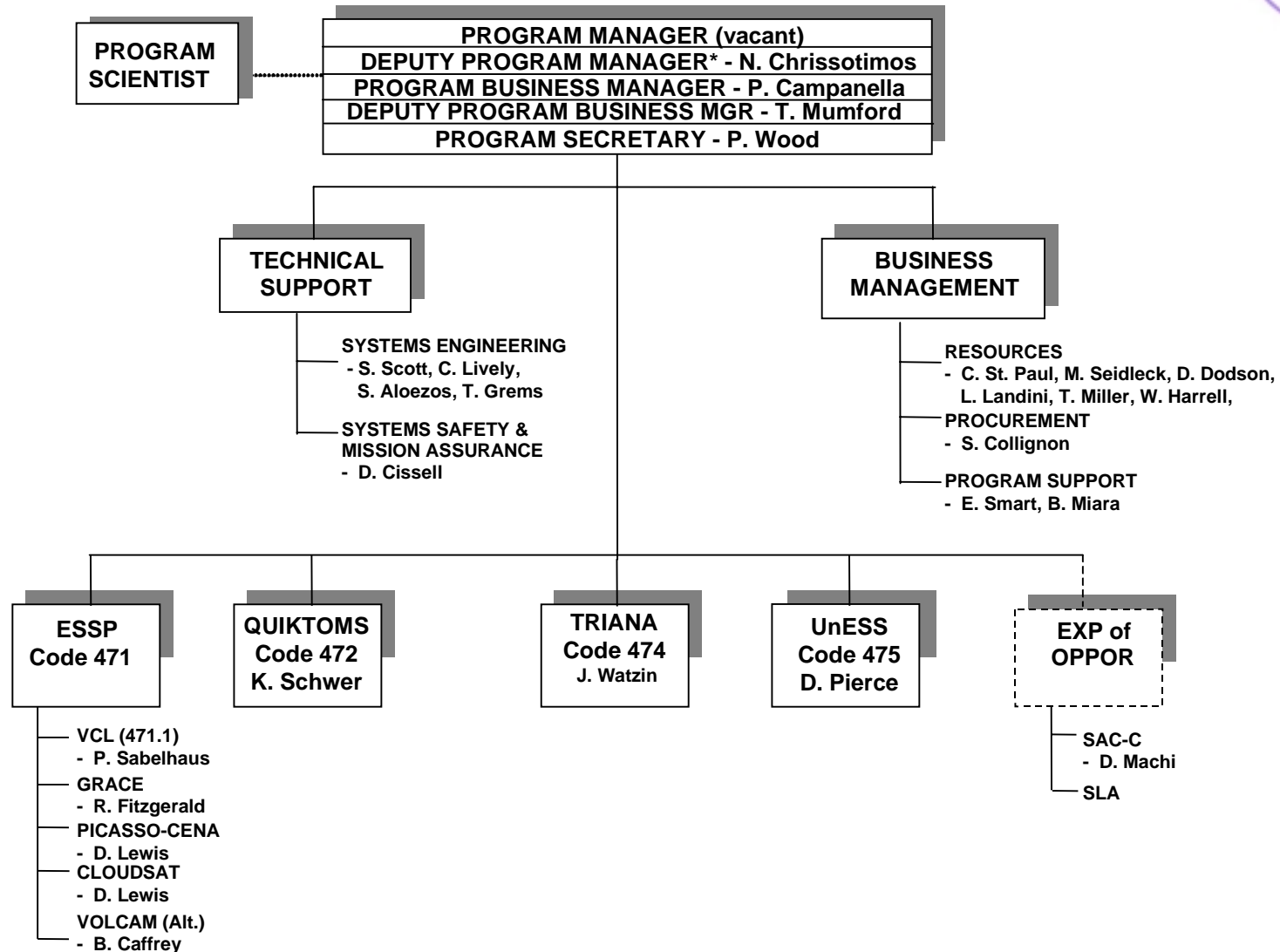
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DRAFT 4/00

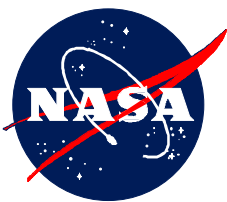


# EARTH EXPLORERS PROGRAM

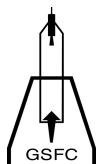
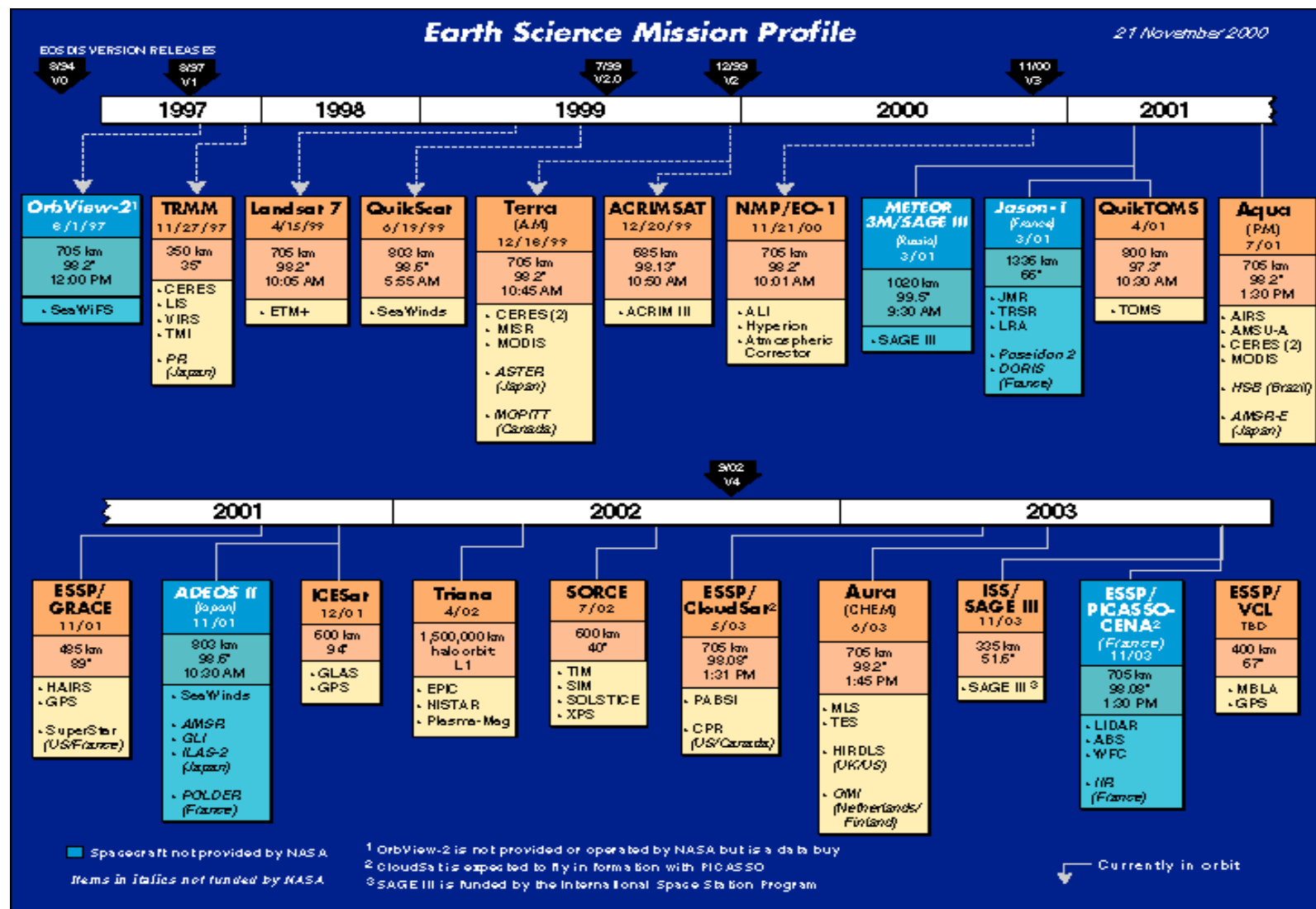
## GSFC CODE 470



\*ESSP Project Mgr.



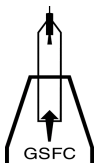
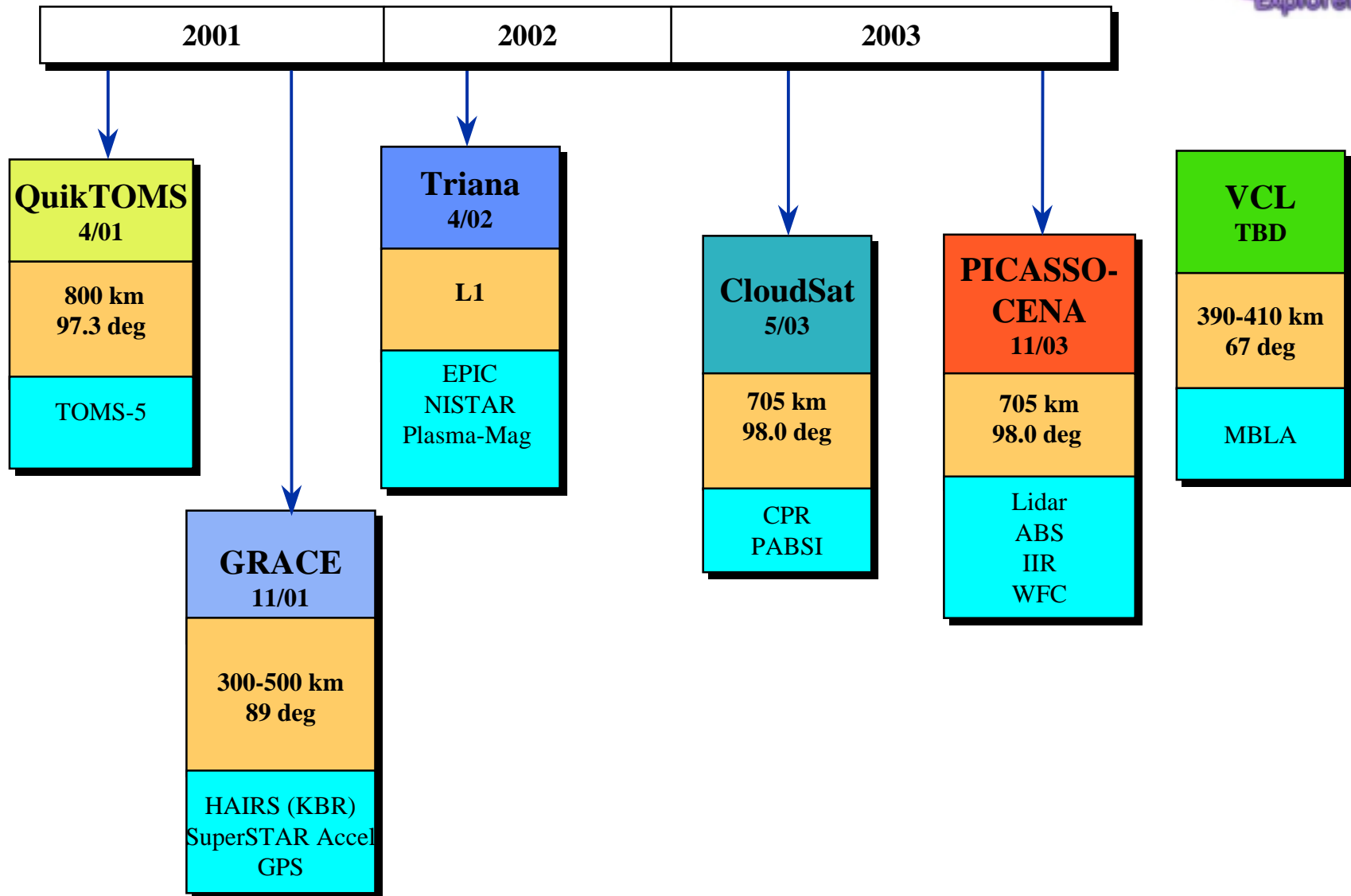
# Earth Science Enterprise Missions

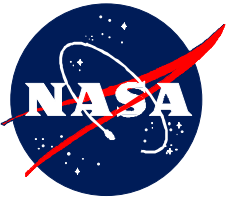






# Earth Explorers Mission Profile

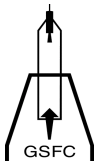


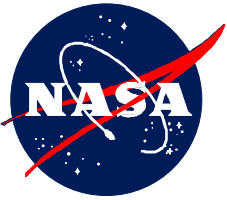


# ESSP PROJECT HIGHLIGHTS



- ☐ **Peer-Reviewed Science Investigations Selected via Announcement of Opportunity (AO) released every two years.**
- ☐ **Series of Small, Quick Turnaround, Low Cost Missions Launched on a Yearly Basis**
  - **Spaceborne Earth System Science Investigations**
- ☐ **Principal Investigator (PI) Responsible for Science Integrity and Assembling Team for Complete Mission Implementation (PI-Mode)**
  - **PI Accountable for Mission Success**
  - **University/Industry/Government/FFRDC and International Teaming**
- ☐ **Opportunities for Commercialization, Educational and Public Outreach**

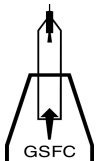


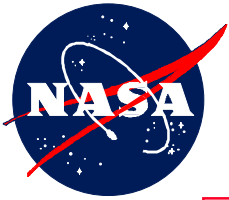


# ESSP AO-3 HIGHLIGHTS



- ☐ **AO-3 scheduled for release in January 2001**
- ☐ **Scientific focus of proposed mission must be clearly beyond the scope of existing projects.**
- ☐ **Launch Vehicle services will be provided and managed by NASA**
- ☐ **Two-Step proposal evaluation process**
- ☐ **3-4 Primary Missions will be selected and funded through MCR**
- ☐ **Targeted cost cap for each mission is \$125M excluding launch vehicle**
- ☐ **Foreign and domestic contributions are allowed (no \$ limit)**

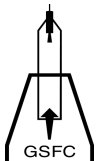




# ESSP AO PROCESS



- ☐ **Two-Step Process**
- ☐ **Step one:**
  - Proposal peer reviewed on science and instrumentation
  - Mission and project management approach secondary
  - Limited number of proposals recommended to proceed to step-two based on science rating
- ☐ **Step two:**
  - Proposals evaluated on science changes from step-one, technical, management, cost and opportunity (education, outreach, SDB etc.)
  - Multiple primary missions (up to 4) selected and funded to proceed through Mission Confirmation Review (MCR)
- ☐ **Final primary mission(s) (up to 2) selected by Earth Science Enterprise Associate Administrator after completion of all MCRs.**
- ☐ **Contracts awarded for selected missions**



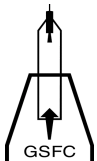


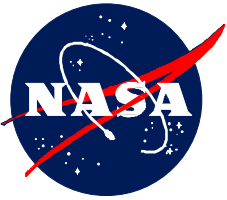
## Current ESSP AO-3 Schedule



<input type="checkbox"/> Draft AO Release	TBD
<input type="checkbox"/> Draft AO Comments Due	TBD
<input type="checkbox"/> AO Release	January 31, 2000
<input type="checkbox"/> Pre-proposal Conference	February 15, 2001
<input type="checkbox"/> Notices of Intent Due	February 28, 2001
<input type="checkbox"/> Step-One Proposals Due	April 2, 2001
<input type="checkbox"/> Step-One Announcement	May 15, 2001
<input type="checkbox"/> Step-Two Proposals Due	August 15, 2001
<input type="checkbox"/> Non-U.S. Letter(s) of Endorsement Due	September 14, 2001
<input type="checkbox"/> Step-Two Announcement of Selections	November 9, 2001

Website: <http://essp.larc.nasa.gov/essp>

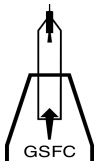


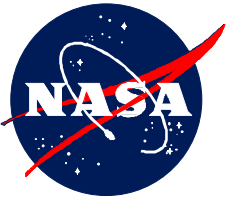


# UnESS Highlights



- ☐ **UnESS missions are very low cost, principle investigator-led space flight missions that substantially involve students in all aspects of the mission, including scientific/applications question formulation, mission formulation, design, development, implementation, scientific data analysis, and outreach.**
- ☐ **UnESS missions encompass the entire project life-cycle from definition through design, development, integration and test, launch, operations, science data analysis and data distribution.**
- ☐ **UnESS missions are peer-reviewed science investigations selected from proposals submitted in response to an AO released by the Office of Earth Science.**





# UnESS AO PROCESS



## ☐ Two-Step Process

### ■ Step one:

- ◆ Proposal peer reviewed on education and science
- ◆ Mission and project management approach secondary
- ◆ Cost reviewed
- ◆ Limited number of proposals recommended to proceed to step-two

### ■ Step two:

- ◆ NASA paid studies to develop Concept Study and Proposal
- ◆ TMCO evaluation of Concept Study
- ◆ Ratings and findings developed and presented to OES

## ☐ Mission selection(s) made by Earth Science Enterprise Associate Administrator

## ☐ Contracts awarded for selected missions

